

Evaluation of Venous Thromboprophylaxis Before and After Implementation of a Pre-Printed Order Set at Surrey Memorial Hospital

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Background

- Venous thromboembolism (VTE), including deep vein thrombosis (DVT) and pulmonary embolism (PE), is a preventable complication in hospitalized patients
- These patients are at risk for developing VTE secondary to decreased mobility and various risk factors
- Since January 2011, thromboprophylaxis is further supported by Accreditation Canada, which has added VTE prophylaxis as a Required Organizational Practice (ROP)
- A pre-printed order set specifically for VTE prophylaxis was implemented at Surrey Memorial Hospital in May 2011 to promote appropriate thromboprophylaxis based on risk assessment

Objectives

- **Primary:** To compare proportion of medical patients receiving thromboprophylaxis before and after implementation of a pre-printed order set for VTE prophylaxis
- To identify proportion of patients receiving thromboprophylaxis within 48 hours of admission
- To identify types and frequencies of regimens used
- To identify reasons for not initiating thromboprophylaxis
- To identify frequency of treatment-related complications

Methods

- Retrospective chart review performed for a pre-specified 4-week period before (Jan11) and after (Jan12) implementation of VTE prophylaxis PPO
- Systematic sampling on every 10th medical patient admitted through emergency department at Surrey Memorial Hospital
- Analysis: Chi²-test, descriptive statistics
- **Inclusion Criteria:**
 - Adult (≥18 years old) medical patients admitted through emergency department at Surrey Memorial Hospital
 - Admission for ≥48 hours
- **Exclusion Criteria:**
 - Patients admitted to surgical wards or who received surgery during hospital stay
 - Pregnant and postpartum patients
 - Patients admitted to psychiatric wards
 - Patients on anticoagulation prior to or on admission

Table 1 – Patient Baseline Demographics

	Before (N = 32)	After (N = 31)
Age (years)	64.4	64.0
Sex (% males)	41	52
Median length of stay (days)	11	11
Disease States	n (%)	n (%)
Cancer (active)	6 (19)	4 (13)
Acute ischemic stroke	3 (9)	2 (7)
Congestive heart failure	3 (9)	4 (13)
COPD	9 (28)	2 (7)
Acute infection	19 (59)	12 (39)
Inflammatory bowel disease	0 (0)	1 (3)
Trauma, spinal injury, MVA	0 (0)	2 (7)
Obesity	7 (22)	4 (13)
Previous VTE	1 (3)	2 (7)
Smoking	3 (9)	5 (16)

Figure 1 – Proportion on VTE Prophylaxis

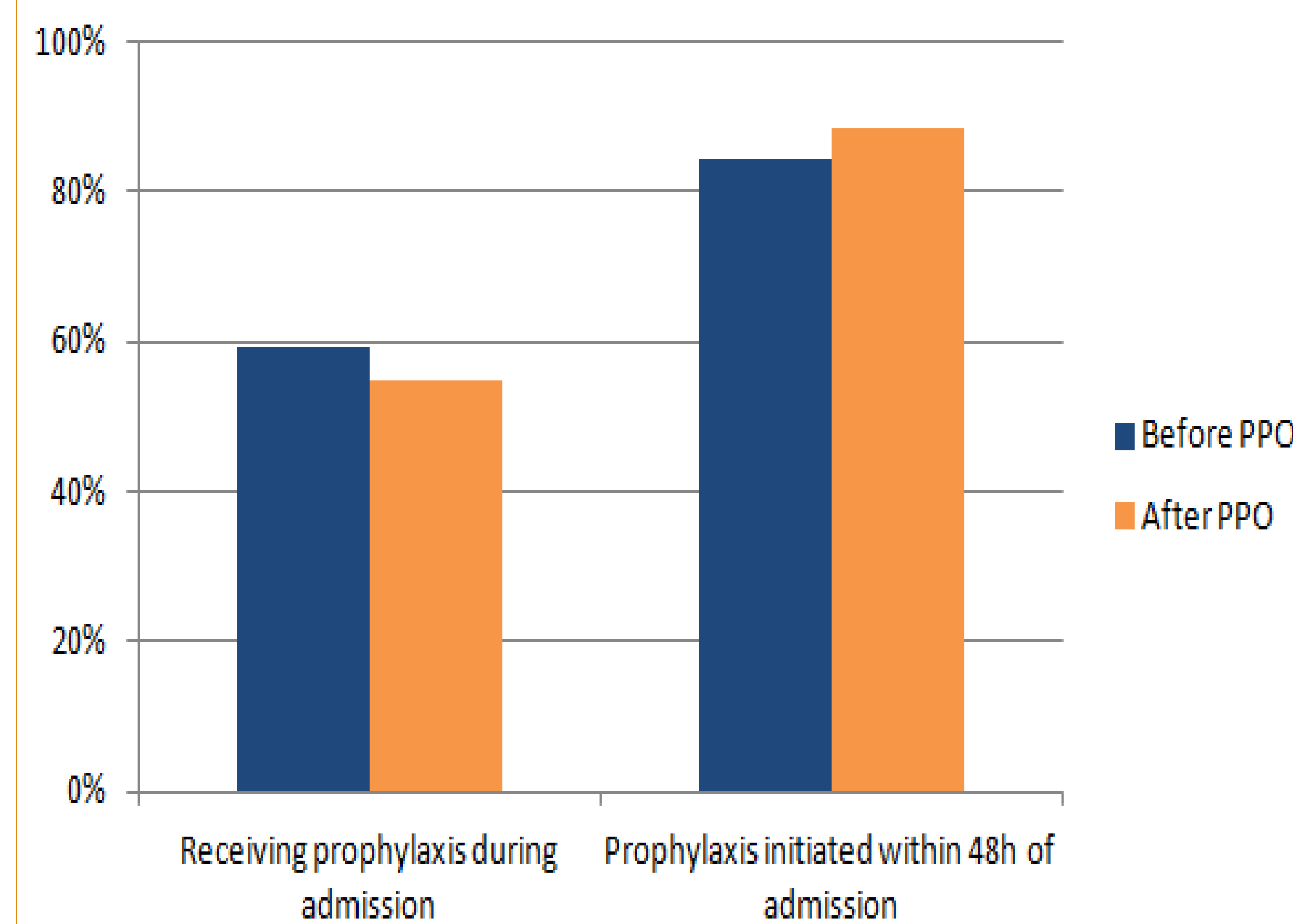
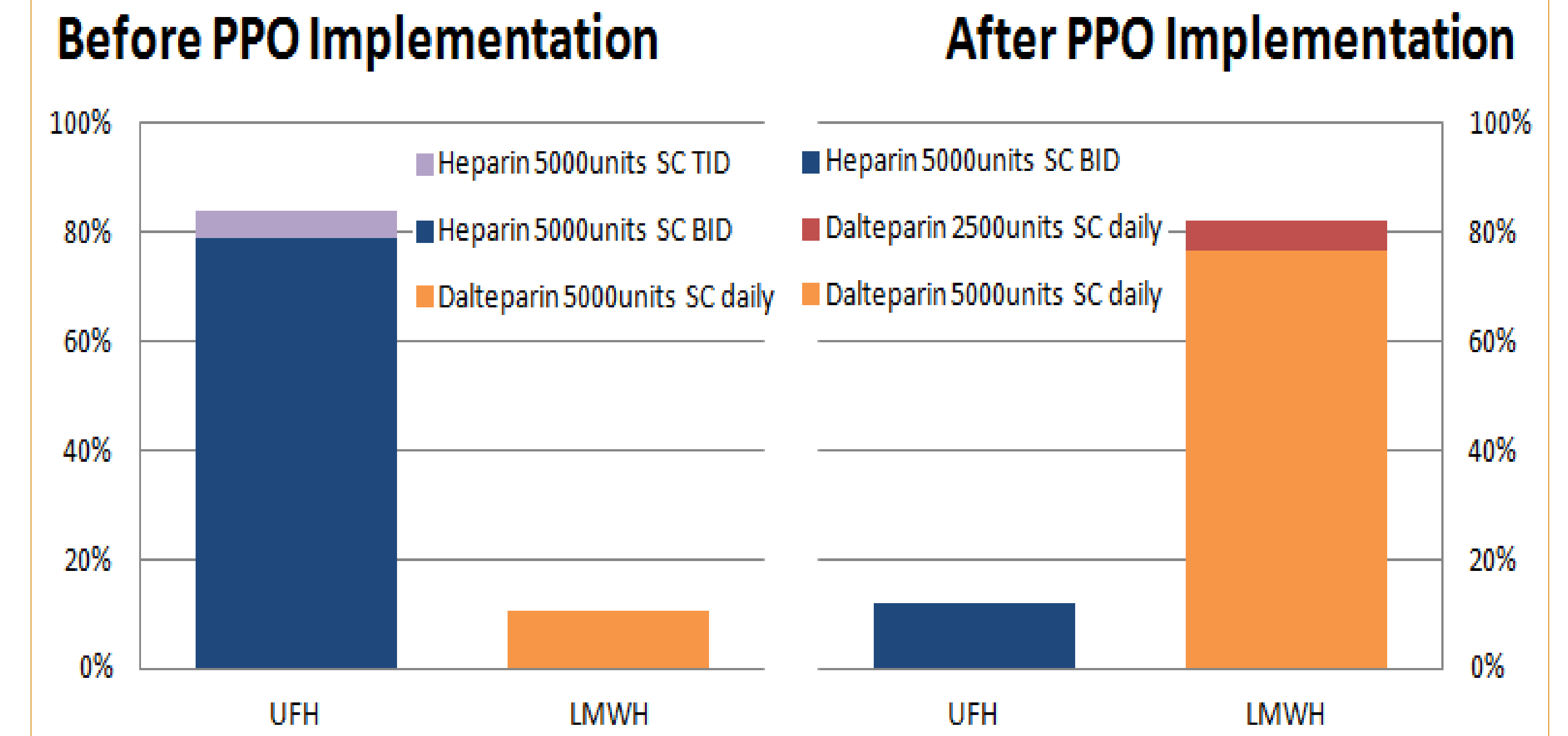


Figure 2 – Types of VTE Prophylaxis



Results

- No difference in proportion of patients receiving thromboprophylaxis before (59.4%) and after (54.8%) PPO implementation (p = 0.72)
- Among patients who received prophylaxis, 84.2% (before) vs. 88.2% (after) were given prophylaxis within 48 hours of admission
- Prior to PPO implementation, 84.2% of patients on prophylaxis received UFH
- Following PPO implementation, 82.4% of patients on prophylaxis received LMWH
- Most common reasons for not initiating thromboprophylaxis were active bleeding and low-risk stratification
- Among patients not receiving prophylaxis, 84.6% (before) vs. 28.6% (after) did not have a documented reason for not initiating thromboprophylaxis
- Potential adverse drug reactions documented included 1 major bleed and 1 minor bleed in both patient groups

Limitations

- Retrospective chart review:
 - Potential for incomplete documentation
 - Small sample size
 - VTE prophylaxis component embedded in other existing PPOs

Conclusions

- VTE prophylaxis PPO did not increase proportion of thromboprophylaxis
- A change in prescribing practice from UFH to LMWH use for VTE prophylaxis was observed since PPO implementation
- Further communication and education campaign may help to minimize subjective variability in assessment of risk factors among physicians while completing VTE PPO

